

CHIZHIKOV, P.M.

Solifluction hypothesis of the formation of clayey top soils. Vest.
Mosk. un. Ser. biol., pochv., geol., geog. 12 no.4:89-96 '57.
(MIRA 11:5)

1. Muzei zemlevedeniya Moskovskogo gosudarstvennogo universiteta.
(Soil formation) (Clay)

CHIZHIKOV, P.N.

Map of parent soil-forming rocks of the European U.S.S.R.
Pochvovedenie no.5:5-10 My '60. (MIRA 14:4)

1. Muzey zemlevedeniya Moskovskogo universiteta.
(Geology—Maps)

CHIZHIKOV, P.N.

Distribution of cover loess-type loams in the Russian Lowland.
Bul.Kom.chetv.per. no.27:28-33 42. (MIRA 16:4)
(East European Plain--Loam soils)

CHIZHIKOV, P.N.

How to understand the term "blanket loan". Pochvovedenie
no.6:97-102 Je '61. (MIRA 14:6)

1. Muzey zemlevedeniya Moskovskogo gosudarstvennogo universiteta.
(Soils--Terminology)

CHIZHIKOV, P.N.

Features of loam covers in connection with their origin. Zem-
levedenie 5:109-122 '60. (MIRA 15:8)
(Loam soils)

CHIZHIKOV, P. V.

Geomorphology and soils of the basin incorporating Lake Nero and the Ust'ye and Kotorosl' Rivers. Trudy Lab.sapr.otl. no.6:130-144
'56. (MIRA 9:11)

(Nero, Lake--Physical geography) (Ust'ye Valley--Physical geography) (Kotorosl' Valley--Physical geography)

CHIZHIKOV, S.

Operation of turbines under decreased vacuum. Trudy NTO chern.met.
20:104-107 '60. (MIRA 13:10)

1. Sinarskiy trubnyy zavod.
(Steam turbines)

CHIZHIKOV, V.A., aspirant

Data on the determination of the maximum permissible concentration of tolylene diisocyanate in the air. Gig. i san. 28 no.62
8-15 Je'63 (MIRA 1714)

1. Iz kafedry kommunal'noy gigiyeny TSentral'nogo instituta usso-
vershenstvovaniya vrachey.

CHIZHIKOV, V.A.

Biological effect and hygienic importance of small concentrations
of tolylene diisocyanate in the air. Pred.dop.kontsent.atmosf.zagr.
no.8:21-41 '64. (MIRA 18:4)

1. Iz kafedry kommunal'noy gigiyeny Tsentral'nogo instituta
usovershenstvovaniya vrachey.

L 23119-66 EWT(1)/T RO/JK

ACC NR: AP5025773

SOURCE CODE: UR/0240/65/000/010/0099/0101

AUTHOR: Chizhikov, V. A.

ORG: Department of Communal Hygiene of the Central Institute for the Advancement of Doctors, Moscow (Kafedra kommunal'noy gigiyeny Tsentral'nogo instituta usovershenstvovaniya vrachey, Moskva)

TITLE: On the functional electroencephalographic method in investigating the effect of imperceptible concentrations of harmful substances on the human body

SOURCE: Gigiyena i sanitariya, no. 10, 1965, 99-101

TOPIC TAGS: medical experiment, electroencephalography, air pollution

ABSTRACT: The author proposes a modification of A. D. Semenenko's functional electroencephalographic method of determining the effect of imperceptible concentrations of harmful substances, such as atmospheric contaminants, on the body. Instead of evaluating the effect of a harmful substance simply by the "electrocortical" reflex, deviation of the biopotential from the norm, the author argues that the dynamics of the overall amplitude of biopotential waves is a better quantitative as well as qualitative index. In a series of experiments in which the subject inhaled toluylene diisocyanate in a concentration of 0.15 mg/m³,

Card 1/2

UDC: 614.715/.72-07 : 612.822.3+612.822.3-614.715/72

L 23119-66

ACC NR: AP5025773

the relative effects for periods from 3 to 30 min are shown in terms of the mean amplitude value of recorded biopotentials. This value was calculated by dividing the overall amplitude of waves by the number of waves. The author considers the mean amplitude value a more accurate index than the overall amplitude in evaluating harmful effects of imperceptible substances on the body. Orig. art. has: 1 table and 1 figure.

SUB CODE: 06/ SUBM DATE: 20Apr64

Card 2/2 *BLG*

L 07339-67 EWP(e)/EWT(m) WH

ACC NR: AP6012148

SOURCE CODE: UR/0413/66/000/007/0066/0066

AUTHORS: Nefedov, B. L.; Chizhikov, V. A.

CRG: none

TITLE: Two-component apochromatic objective. Class 42, No. 180370

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 7, 1966, 66

TOPIC TAGS: optic lens, optic system, applied optics

ABSTRACT: This Author Certificate presents a two-component apochromatic objective with lenses made of two types of glass. One type is the heavy crown glass TK4, the other is Kurts-flint glass OF4. To keep the spherical aberration to its minimum value, the objective components are made up by cementing two lenses (see Fig. 1). The first and the fourth of these are made of crown glass, the second and the third of flint glass, and the optical power of the first component is equal to 0.4--0.6 of the power of the entire objective.

Card 1/2

UDC: 535.317.2

L 07339-67

ACC NR: AP6012148

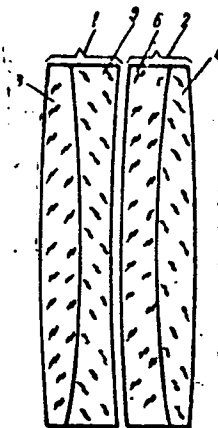


Fig. 1. 1 - first component; 2 - second component; 3 - first lens; 4 - fourth lens; 5 - second lens; 6 - third lens

Orig. art. has: 1 figure.

SUB CODE: 20, 13/ SUBM DATE: 13Apr64

Card 2/2 vml

CHIZHIKOV, V.I.

ATAULIN, V.V.; VLASOVA, R.M.; DAVYDOVA, Ye.A.; DANILENKO, I.S.; DZIOV, V.A.;
DUBROVIN, A.P.; YEFANOVA, L.V.; KARPENKO, L.V.; KLEPIKOV, L.N.;
KOTRELEV, S.V.; LUK'YANOV, N.I.; MEL'NIKOV, N.V., prof., obshchiy
red.; MKRTYCHAN, A.A.; NEMTINOV, A.M.; POGOSYANTS, V.K.; SEMIZ,
M.D.; SKOBLO, G.I.; SLOBODCHIKOV, P.I.; SMIRNOV, V.M.; SUSHCHENKO,
A.A.; SOKOLOVSKIY, M.M.; TRET'YAKOV, K.M.; FISH, Ye.A.; TSOY, A.G.;
TSYPKIN, V.S.; CHEKHOVSKOY, P.A.; CHIZHIKOV, V.I.; ZHUKOV, V.V.,
red.izd-va; KOROVENKOVA, Z.L., tekhn.red.; PROZOROVSKAYA, V.L.,
tekhn.red.

[Prospects for the open-pit mining of coal in the U.S.S.R.; studies
and analysis of mining and geological conditions and technical and
economic indices for open-pit mining of coal deposits] Perspektivy
otkrytoi dobychi uglia v SSSR; issledovanie i analiz gornogeologi-
cheskikh uslovii i tekhniko-ekonomicheskikh pokazatelei otkrytoi
razrabotki ugol'nykh mestorozhdenii. Pod obshchei red. N.V.Mel'-
nikova. Moskva, Ugletekhizdat, 1958. 553 p. (MIRA 11:12)

1. Vsesoyuznyy tsentral'nyy gosudarstvennyy proyektnyy institut
"Tsentrorgiproshakht." 2. Chlen-korrespondent AN SSSR (for Mel'-
nikov).

(Coal mines and mining)

CHIZHIKOV, V.P., inzhener.

Electric furnace for warming the soil. Energetik 4 no.1:30-32
Ja '56. (MIRA 9:4)
(Soil heating) (Electric heating)

SAMSONOV, B.G.; CHIZHIKOV, V.V.

Hydrochemical zoning of interstitial waters in northern Kazakhstan
and conditions governing the exploitation of fresh waters. Sov.geol.
6 no.12:133-138 D '63. (MIRA 16:12)

1. Sredneaziatskaya ekspeditsiya Vsesoyuznogo gidrogeologicheskogo
tresta.

SAMSONOV, B.G.; CHIZHIKOV, V.V.

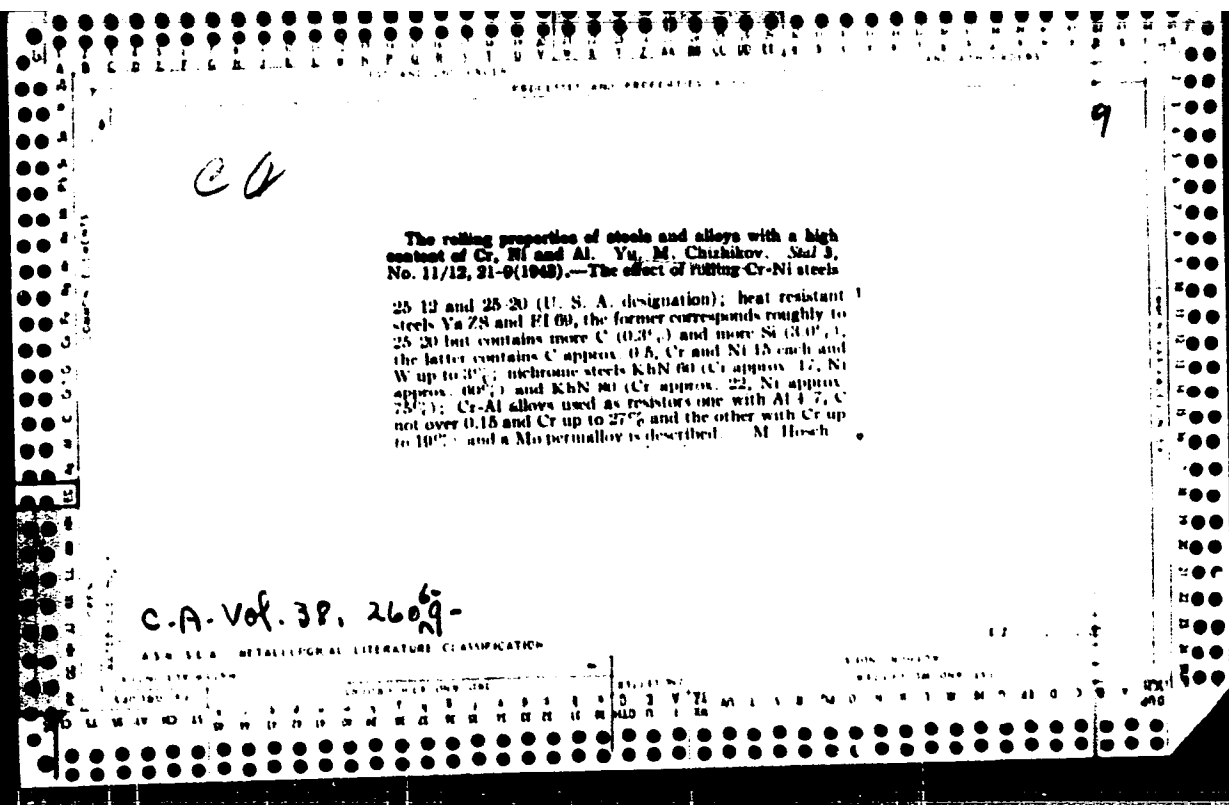
Karst-interstitial waters of Devonian-Carboniferous troughs in northern Kazakhstan as the source of a centralized water supply. Sov.geol. 4 no.11:137-145 N '61. (MIRA 14:11)

1. Ministerstvo geologii i okhrany nedr SSSR.
(Kazakhstan--Water, Underground)

KIDIN, I. N.; SHTREMEL', M. A.; CHIZHIKOV, V. Yu.

Hardening of a solid solution of nickel-chromium during
quenching. Izv. vys. ucheb. zav.; chern. met. 7 no. 5:124-129
'64. (MIRA 17:5)

1. Moskovskiy institut stali i splavov.



CHIZHIKOV, YU. M.

The heat treatment of metals 2. Izd. Moskva, Gos. nauch.-tekhn. izd-vo lit-ry po chernoi i
tsvetnoi metallurgii, 1945. 63 p. (V pomoshch'rabochimmetallurgam Iura) (49-57A26)

TN672.05 1945

CHIZHIKOV, Yu. M.

"Effect of the Composition of Steel on the Spread in Rolling," Stal', No.5,
pp. 405-12, 1945

Evaluation B-59660

CHIZHIKOV, YU. M.

Nagrev metalla. 2. izd. Moskva, Metallurgizdat, 1945. 63 p. illus.
(V pomoshch'rabochim-metallurgam IUGa)

(Heat treatment of metals.)

DLC: TN672.C5 1945

SO: Manufacturing and Mechanical Engineering in the Soviet Union,
Library of Congress, 1953.

1ST AND 2ND SHEET		3RD AND 4TH SHEET	
PROCESSING AND PROPERTIES CODE			
18			
<p>A NEW METHOD FOR THE DETERMINATION OF PLASTICITY. Yu. M. Chishikov. (Zavodskaya Laboratoriya, 1978, vol 14, May, pp 608-613). (in Russian). Details are given of a method for measuring plasticity, which is suitable for both experimental and control purposes. The specimen of square section (length of side 35-40 mm) 200-250 mm long, prepared by mechanical working or by casting in a special detachable mould, is passed at a speed of up to 6 m/sec, or greater, through a roll designed to give a reduction that increases progressively along the length of the specimen up to a maximum value of 75% or even greater. The minimum degree of reduction at which discontinuities make their appearance in the surface of the specimen is taken as the index of plasticity. For greater convenience, scales, calibrated for the roll passes adopted, can be constructed and photographed alongside the specimen; examples of these photographs are reproduced.</p> <p><i>CENT. Sci. Res. INST. Ferrous Metals S.K.</i></p>			
AS 6-51A METALLURGICAL LITERATURE CLASSIFICATION			
FROM SOURCE		EXCLUDED	
EXCLUDED		EXCLUDED	

CA

Estimation of the plasticity of metals and alloys suitable for the conditions of hot working by compression. Yu. M. Chishchikov. *Zashchita* Lab. 15, 191-9(1949).— Methods of detg. the hot working ability of cast and wrought alloys are compared and wedge rolling is found to be best. This method consists in rolling a bar of square or rectangular cross section in rolls of continuously varying sepn. so that a wedge is produced that varies in percentage reduction of height, U , from 0 to 70% or more. The percentage reduction at which cracking begins is the limit of plasticity, and it is plotted vs. temp. to give a plasticity diagram. Diagrams of 5 types are proposed depending on the appearance of a max., min., etc. in the range 850-1350°. A cast 30% Cr steel has a plasticity U greater than 0.7 up to 1250°. Cast Armco iron shows a min. U = 0.7 at 1000°. Cast 18-4-1 steel shows a max. U = 0.8 at 1230°. Cast 18-8 steel shows a max. U = 0.68 at 1240°. A category of plasticities increasing in steps of 0.2 U is proposed. Those alloys whose plasticities increase with increasing temp. are called plastically "soft"; those that decrease are called "hard." A. G. Guy

PHASE I Treasure Island Bibliographic Report

BOOK

Author: CHIZHIKOV, I. M., Candidate of Technical Sciences

Call No.: TS340.C52

00000079

Full Title: ROLLING MILL PRODUCTION

Publishing Data

Originating Agency: None.

Publishing House: State Publishing House of Scientific-Technical Literature on
Ferrous and Nonferrous Metallurgy. (Metallurgizdat). Moscow.

No. pp.: 512.

No. of Copies: 7,000.

Date: 1952.

Editorial Staff

Editor: None.

Editor-in-Chief: None.

Technical Editor: None.

Appraiser: None.

Text Data

Coverage: The main principles of the plastic deformation theory as well as rolling mill processes are outlined; also, the technology of the production of various types of rolling mill products. The following general problems are considered: heating and cooling of metals, preparation of metals for the rolling mill, control of rolling mill processes, etc. The theory and process of calibration of rolls, and special problems of rolling alloys, high grade alloy steels, and nonferrous metals and alloys are analyzed. The author describes the results of his experiments relating to these problems. 336 Illustrations and charts. 43 Tables.

Purpose: A textbook for metallurgical tekhnikums; may also be used by engineers, technicians, and students of institutions of higher learning.

1/2

CHIZHIKOV, IU. M.

00000079

Card 2/2

Full Title: ROLLING MILL PRODUCTION

Call No.: TS340.C52

Facilities: None.

No. of Russian References: 82.

Available: Library of Congress.

CHIZHIKOV, Yu.M., kand.tekhn.nauk

Determining the coefficient of rolling friction. Obr.met.davl.
no.2:36-41 '53. (MIRA 12:10)
(Rolling (Metalwork)) (Friction)

CHILNIKOV, Yu. A.

Dissertation: "Effect of Shrinkage on Some Phenomena Which Accompany the Process of Rolling." Dr Techn Sci, Institute of Metallurgy, Acad Sci USSR, Moscow, 1954.
(Referativnyi Zhurnal-Khimiya, No 12, Moscow, Jun 54)

SO: SOA 313, 23 Dec 1954

CHIZHIKOV, Yu.M., kand.tekhn.nauk

Logarithmic formulas for calculating expansion in rolling. Obr.
met.davl. no.3:74-85 '54. (MIRA 12:10)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy
metallurgii.

(Rolling (Metalwork))

CHIZHIKOV, Yu. M.

"The Influence of Reduction on Certain Phenomena Connected With the Rolling Process." Dr Tech Sci, Inst of Metallurgy imeni A. A. Baykov, Acad Sci USSR, 10 Feb 55. (VM, 26 Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: SUM. No. 556, 24 Jun 55

137-58-1-594

CHIZHIKOV YU. M.
Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 1, p 93 (USSR)

AUTHOR: Chizhikov, Yu. M.

TITLE: Intensification of the Process of Rolling in Blooming Mills (Intensifikatsiya protsessa prokatki na blyumingakh)

PERIODICAL: Tr. Nauchno-tekhn. o-va chernoy metallurgii, 1956, Vol 10, pp 343-356

ABSTRACT: Laboratory experiments in collar rolling (R) show that the macrostructure of cast steel is not a factor determining its plasticity and does not impair the possibility of increasing the reduction. The low plasticity of cast steel is determined by the presence of excess phases and harmful impurities along the grain boundaries. Blooms of alloy steel of normal quantity may be subjected to strong reduction starting at the very first passes in R. This has been verified on the Nr 900 blooming mill of the Zlatoust iron and steel mill after the rolls were increased to 1000 mm diameter, the clamp-down screws and nuts of the stand had been reinforced, and the grooving of the rolls had been changed. With the new grooving, the first pass was shifted to the middle of the roll body to ease the stress on the housing

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137-58-1-594

Intensification of the Process of Rolling in Blooming Mills

and the depth of its groove was reduced to 135 mm. The plans developed provide that in the first groove the number of passes in the R of all alloy steels be reduced by 1/3 to 2 thirds. In the remaining grooves, the number of passes either may be cut in half or may undergo no change at all, owing to difficulties in achieving a final profile having dimensions that satisfy the requirements of the GOST (All-Union State Standards). Factory inspection has determined that the quality of the metal is good and there are no rejections due to mechanical properties. See RzhMet 1957, Nr 12, 22805. M. Z.

1. Steel—Processing 2. Rolling mills—Operation 3. Rolling mills—Equipment

Card 2/2

CHIZHIKOV, Yu.M.

BELOUSOV, A.S., inzhener; KON'SHIN, P.P., inzhener; KANTOR, S.Z.:
SEM KOV, V.D.; SPORYSHKOV, P.N.: TURITSYN, V.V.; CHIZHIKOV, Yu.M.
kandidat tekhnicheskikh nauk;

Improve the quality of hollow bore steel. Metallurg 2 no.2:21-28
P '57.
(MIRA 10:4)

1. Zavod "Serp i molot" (for Belousov, Kon'shin).
 2. TSentral'naya zavodskaya laboratoriya (for Kantor).
 3. Starshiy kalibrovshchik Zavoda im. Serova (for Semkov).
 4. Nachal'nik prokatnoy laboratorii (for Sporyshkov).
 5. Rukovoditel' sortovoy gruppy TSentral'noy zavodskoy laboratorii Zavoda "Krasnyy Oktyabr'" (for Turitsyn).
 6. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii (for Chizhikov).
- (Tool steel) (Boring machinery)

PHASE I BOOK EXPLOITATION 1018

Chizhikov, Yuriy Mikhaylovich

Prokatnoye proizvodstvo (Manufacture by Rolling) 2d ed., rev. and enl. Moscow, Metallurgizdat, 1958. 612 p. 12,000 copies printed.

Ed.: Fastovskiy, B.G.; Ed. of Publishing House: Golyatkina, A.G.; Tech. Ed.: Bekker, O.G.

PURPOSE: This book is intended as a textbook for metallurgical tekhnikums and may be useful to students of vtuzes and to engineers and technicians working in metal forming.

COVERAGE: The author presents the fundamentals of the theory of plastic deformation and discusses the process and technique of rolling. Problems of the theory and practice of roll design are analyzed and commercial sizes of rolled shapes, heating and cooling of the work, preparing it for rolling, process control, etc. are discussed. The processes of manufacture of the principal kinds of rolled products and methods of calculating the productivity of rolling mills are described.

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Manufacture by Rolling

1018

Special features of rolling of alloy and high-alloy steels and of nonferrous and rare metals are investigated. Technical and economic information on rolling are given, as well as some data necessary for planning rolling mills. The author presents the results of his work on a number of problems concerning the theory, methods and practice of rolling. No personalities are mentioned. There are 134 references, of which 117 are Soviet, 7 English, 8 German, and 2 Scandinavian.

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1. Calculation of blooming-mill productivity

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PART VIII. ROLLING MILLS

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AVAILABLE: Library of Congress

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1-20-59

Chizhikov, Yu. M.
25(1) p 2, 3, 6.

PHASE I BOOK EXPLOITATION

SOV/1878

Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii. Institut
stali

Prokatnoye i truboprokatnoye proizvodstvo (Rolling and Tube Rolling) Moscow,
Metallurgizdat, 1959. 268 p. (Series: Its: Sbornik trudov, vyp. 16)
Errata slip inserted. 2,500 copies printed.

Sponsoring Agency: USSR. Gosudarstvennaya planovaya komissiya.

Ed.: B. P. Bakhtinov; Ed. of Publishing House: N. A. Valov; Tech. Ed.: A. I.
Karasev.

PURPOSE: This collection of articles may be of interest to scientific workers,
process engineers in rolling and tube-rolling plants, and students of metal-
lurgical vtuzes.

COVERAGE: The articles describe work done at the laboratory for metal forming
at the Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii
(Central Scientific Research Institute of Ferrous Metallurgy). Some theo-
retical and practical problems of hot and cold rolling of simple and intricate

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Rolling and Tube Rolling

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shapes and tubes are considered. Many of the articles discuss results of scientific research carried out under actual operating conditions. K.K. Andratskiy, A.I. Filatova, V.S. Smirnov, P.T. Yemel'yanenko, A.I. Tselikov, N.D. Lomakin, V.Ya. Ostrenko, D.Ye. Rokhman, O.A. Plyatskovskiy, I.A. Fomichev, Yu.K. Fedorov, and V.N. Shashkov are mentioned as having contributed to this field. There are 37 references: 33 Soviet and 4 German.

TABLE OF CONTENTS:

Chizhikov, Yu.M., Candidate of Technical Sciences. Influence of Various Factors on Rate of Production of Blooming Mills

5

The author shows how the rate of production of blooming mills is affected by the weight of ingots, number of passes, size of blooms produced, number of manipulations, speeds and dwells during rolling, and how all these factors affect each other. The increase in rate of production of a blooming mill for any individual case can be calculated from Formula 7.

Chizhikov, Yu.M., Candidate of Technical Sciences, and I.G. Drozd. Some Strength Characteristics of a Blooming Mill

23

The authors discuss the design for strength of the main part of a blooming mill and compare data on existing pressures in blooming mills used in four plants.

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Chizhikov, Yu. M., Candidate of Technical Sciences. Lateral Deformation in Rolling and Forging of Large Sections

36

The author discusses spread of blooms in rolling and forging and compares results obtained.

Kabantsev, N. A. and I. G. Drozd, Engineers. Pressure of Work on Rolls and Torques in Rolling Alloy Steels on Blooming Mills

47

The pressure was measured by strain gages. The torque was determined by the formula $M_d = 0.97K\Phi I$, where M_d is torque of motor shaft; K a coefficient constant for a given mill; Φ the magnetic flux of the motor, and 0.97 the efficiency of the installation.

Kabantsev, N. A., Engineer. Determination of Torques in Rolling

59

Experiments were made in the laboratory and under operating conditions by means of torsimeters. The deformations were picked up by wire strain gages.

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Vitkin, A.I., Candidate of Technical Sciences. Single-stand Continuous Mill

71

The author discusses the increase of the draft until a 90 percent reduction is attained in a single pass through the stand. A single-stand rolling mill with two pairs of working rolls was built in the TsNITMASH rolling laboratory. The results of laboratory rolling are given.

Grudev, P. I., Candidate of Technical Sciences. On Determination of Flattening of Rolls [During Rolling]

81

The author offers a method of determining the elongation of the arc of contact due to flattening of rolls.

Svede-Shvets, N. I., Candidate of Technical Sciences. Methods of Measuring the Temperature of the Roll Surface of Sheet Mills

88

In TsNIChM (Central Scientific Research Institute of Ferrous Metallurgy) two methods of measuring the temperature of moving bodies were developed: 1) by stationary thermocouples (measuring the drop in temperature between two points), and 2) by a movable ("walking") thermocouple for measuring the true temperature. Measurement of temperature of rolls during rolling is desirable in order to

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control the temperature of rolls--i.e, the uniformity of sheet thickness-- automatically.

Aleksandrova, T. K., Engineer. Some Problems of Pass Design of Rolls for Cold Rolling of Shapes

102

In designing passes for cold rolling of complex shapes a special technique which assures dimensional accuracy of shapes should be used. Basic considerations for designing passes for complex shapes are presented.

Pavlov, Ig.M., Corresponding Member, Academy of Sciences, USSR, Doctor of Technical Sciences, and M. L. Zaytsev, Engineer. Method of Comparing Pass Designs as Related to Efficiency of Deformation

111

To compare the amount of deformation in one pass, the authors use the interrelations between cross-sectional areas of the work: $F_{initial}$, F_{end} , and $F_{displaced}$. As a criterion for efficiency of deformation, the ratio of volume displaced in the longitudinal direction to the volume displaced in the lateral direction may be used.

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Zaytsev, M. L., Engineer. Efficiency of Deformation During Rolling in Diamond and Oval Shapes as Compared With Deformation in Plain Rolls 122
The author describes the methods of experiments he conducted on the basis of the idea presented in the preceding article and presents results of their evaluation. He comes to the conclusion that the criteria examined make it possible to answer the question of the suitability of using a given pass design. He found that in deformation of a square bar a higher efficiency was attained in a diamond pass than in an oval pass, or in plain rolls.

Zaytsev, M. L., Engineer. Design of a Diamond Pass for a Diamond-square System 134
Using the relations presented in the article written with Ig. M. Pavlov (p. 111), the author shows how to determine the dimensions of a diamond pass and of the following square pass.

Chizhikov, Yu. M., Candidate of Technical Sciences, and A. N. Funde, Engineer. Conditions for Obtaining Quality Hollow Steel Bar Stock for Drilling 140
The article discusses sizes and mechanical properties of billets with inserted cores and also the pass design necessary for making a good product.

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Rolling and Tube Rolling

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- Funde, A. N., Engineer. Effect of Some Processing Factors on the Quality of Hollow Steel Bar Stock for Drilling 154
 The influence of heating conditions, of the clearance between the billet and the inserted core, of the billet's curvature, of the displacement of the center of the hole, and of tilting the stock are discussed.
- Teterin, P. K., Candidate of Technical Sciences. Tangential Slipping and Friction Forces in Cross Rolling and Roll Piercing 162
 The author discusses discrepancies between experimental and theoretical data concerning the direction of slipping of the work and of tangential forces acting in cross rolling and roll piercing. Equations for rolling contact angle, for coefficient of tangential slip, and for efficiency are derived.
- Teterin, P. K., Candidate of Technical Sciences. Conditions for Rotation of the Work in Roll Piercing 181
 Equations based on deformation and giving the conditions for regular rotation of work are derived and compared with an equation based on the kinematics of rolling. Conditions for gripping the work by rolls are also analyzed.

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Teterin, P. K., Candidate of Technical Sciences. Twisting of Work in Roll Piercing

195

The author derives equations for the twisting angle and the helix angle of the work for any section of contact area, for the twisting angle after leaving the rolls, and/or the taper angle of the rolls at which there will be no twisting (eq.27). All these equations are derived taking into account the axial slipping of the work and the variation of its axial velocity along the arc of contact.

Teterin, P. K., Yu. V. Manegin, I. Ye. Musorina, and Ye. A. Trifonov, Design of Roll Profile for Rotary Rolling and Sizing Mills

215

The profiling of rolls is described, and results of tests carried out in TsKBMM of TsNITMASH are presented. It was found that with increasing taper of the gripping portion of sizing rolls, the permissible draft will also increase.

Teterin, P. K., Yu. V. Manegin, and A. S. Burov. Pressure of Work on Rolls in Pilger Process

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The dependence of pressure distribution along the contact arc on roll design, wall thickness of pipe, and amount of feed is explained. The dependence of the amount of pressure on rolling temperature, wall thickness, and feed is established.

Teterin, P. K., N. L. Klyamkin, and I. Ye. Musorina. Mastering the Manufacture of Two-Layer Brazed Tubes 241

The method of cold roll forming of a thin (0.6 to 0.9 mm) copper-coated steel band with tapered edges into a two-layer brazed tube (6 to 16 mm. in diameter) has been developed and mastered in the laboratory for tube manufacture of the Institut metallurgicheskikh problem (Institute for Metallurgical Problems). The authors state that these tubes show a fatigue strength 3 to 4 times higher than that of copper tubes. The corrosion resistance is also better, due to the copper coating; they are approximately 3 times cheaper than copper tubes. The waste of material amounts to only 5 percent in comparison with 50 percent and more in cold drawing.

Pavlov, Ig. M., P. K. Teterin, N. L. Klyamkin, and I. Ye. Musorina. Roll Design for Forming Two-Layer Tubes 251

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Rolling and Tube Rolling

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- The two-layer tubes are cold-roll-formed in fourteen-stand continuous machines. The method of roll design, tapering of edges, and the shapes and construction of all 14 pairs of rolls are discussed and illustrated. The process of forming the band into a two-layer tube is described.

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133-58-5-16/31
AUTHOR: Chizhikov, Yu. M., Candidate of Technical Science
TITLE: On Calculations of the Metal Pressure on Rolls
(K raschetu davleniya metalla na valki)
PERIODICAL: Stal', 1958, Nr 5, pp. 428-433 (USSR)
ABSTRACT: The author discusses the applicability of various formulae, in particular those of Ekelund and Tselikov for the determination of the resistance to deformation and the pressure of metal on rolls. Some comparisons of calculated and experimental data are given (Table 3). It is concluded that as yet the theory of rolling did not produce a satisfactory analytical method of determining the resistance of metal to deformation on rolling. In order to derive a suitable formula which will give results sufficiently close to those obtained by direct measurements a wide number of investigators of the rolling process should carefully analyse the relevant data accumulated during the last few years. There are 3 tables, 3 figures and 11 references, 9 of which are Soviet, 2 German.
ASSOCIATION: TsNIIChM.
Card 1/1

CH 12 H. Kov, Ya. M.

Moscow, Tsentral'nyy nauchno-issledovatel'skiy institut khimicheskoy metallurgii

Spetsial'nyye stali i splavy (Special Steels and Alloys) Moscow, Metallurgizdat, 1960. 488 p. (Series: Ity: Sbornik trudy, vyp. 17) Errata slip inserted. 4,000 copies printed.

Sponsoring Agencies: Institut kachestvennykh staley; Gosudarstvennyy planovyy komitet Soveta Ministrov SSSR; i Glavnoye upravleniye nauchno-issledovatel'skikh i proyektnykh organizatsiy.

Ed.: M.V. Fridantsev; Ed. of Publishing House: A. L. Ozeretskaya;
Tech. Ed.: V.V. Mikhaylova.

FUN7032: This book is intended for engineering and research personnel in the metallurgical and machine-building industries.

COVERAGE: This book contains papers on the physical properties of special industrial steels and alloys. Individual papers treat: the problem of flake formation in steels and preventive measures, the effect of alloying additions and heat treatment on the structure and properties of steel, steel corrosion and preventive measures, and the properties of chromium-nickel alloys. There are 100 pages, 22 scientific German, and 2 French.

Prizantsev, M.V. [Professor, Doctor of Technical Sciences], and
A.A. Lankaya [Candidate of Technical Sciences]. The Effect of
Carbon on Heat-Resisting Properties of Low-Alloy Boiler Steels 80

Prigantsev, M. V., and N. A. Landoys. New Czech Nationality Museum for Cracking Plants 86

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Butrenko, A.G. [Engineer]. Properties of Cold Transformer Grade
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McClellan, A.A. [Engineer]. Cold Rolled Dynamo Grade Electrical
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Abakov, A.A. [Candidate of Technical Sciences], and T.A. Zhaden
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Abakov, A. A., and D. G. Tufanov [Engineer]. Pitting Corrosion of
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Labakov, A. A., and Ye. N. Karava. Stabilizing Anneling and Its Effect on Corrosion Resistance of Incolloy Steel. Z04

Abakov, A.A., D.G. Tufanov, and A.A. Sabinin (Engineer). See: "Water Corrosion of Steels."

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Orlov, Ye. V. [Engineer]. On the Tendency of Chromium-Nickel-Titanium-Copper Steels Towards Intermetallic Corrosion. 205

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 Zhukov, A.A., and Ye.V. Polozova [Engineer]. Corrosion of Steel

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THE EFFECT OF BARIUM
CHLORIDE, BARYTES, AND RAY, X-RAY, UPON THE
GROWTH OF CUCUMBER PLANTS. BY A. L. ALLEN.
JOURNAL OF THE ROYAL SOCIETY OF MEDICINE, 1914, 7, 111-114.

Trakht, A.V. (Editor). *Principles of Cellular and Molecular Biology and Biophysics*. Moscow: Mir Press, 1977. 340 pp. 100,000 rub.

LEVITOV, M.V., and A.V. MARTIN. Chemical and physical properties of polymers. 1964. 200 p.

[illegible]

2000

CHIZHIKOV, Yu.M., kand.tekhn.nauk

Properties and characteristics of special alloys with a high nickel
and molybdenum content. Sbor. trad. TSNIICEM no.17:325-348 '60.

(MIRA 13:10)

(Nickel alloys)

(Molybendum alloys)

CHIZHIKOV, Yuriy Mikhaylovich; SMIRNOV, V.S., red.; BRINZA, V.N., red. izd-
va; ATTOPOVICH, M.K., tekhn. red.

[Rollability of steel and alloys] Prokatyvaemost' stali i splavov.
Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi me-
tallurgii, 1961. 451 p. (MIRA 14:11)
(Rolling (Metalwork)) (Deformations (Mechanics))

S/148/61/000/002/006/011
A161/A133

AUTHOR: Chizhikov, Yu. M.

TITLE: New formulae to determine the deformation resistance during rolling

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no. 2
1961, 77 - 85

TEXT: Some new non-Soviet formulae are analyzed and criticized. The author mentions that these formulae had not yet been discussed in Soviet literature and emphasizes the importance of the matter for no reliable calculation method exists. The criticism concerns the following publications: by E. Orowan (Ref. 2: E. Orowan, The Institution of Mechanical Engineers Journal and Proceedings, 1943, no. 4, v. 3); E. Orowan, K. Pascoe (Ref. 3: The Iron and Steel Institute Special Report, no. 34, London, 1946); A. Kneschke (Ref. 5: Hydrodynamische Theorie des Walzvorganges, Bergakademie, 1954, no. 1, and Ref 6: Archiv für das Eisenhüttenwesen, 1957; no. 2) R. Sims (Ref. 8: Proceedings of the Inst. of Mech. Engineers, 1954, no. 6, v. 168); E. Larke (Ref. 10: The Rolling of Strip, Sheet and Plate, London, 1957, Russian translation "Prokatka listovogo metalla", Metallurgizdat, 1959). It is proven that all these formulae do not correspond to the real process conditions. Discrepancies

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New formulae to determine the deformation resistance ... S/148/61/000/002/006/011
A161/A133

are pointed out in R. Sims' calculations and table, and an apparent omission in the final formula (repeated later by E. Larke), though even after correction the Sims formula is not right. There are 6 figures and 10 references: 3 Soviet-bloc and 7 non-Soviet-bloc. The references to the English-language publications are cited in text.

Card 2/2

CHIZHIKOV, Yuriy Mikhaylovich; KOTEL'NIKOV, V.P., red.;
GOROBINCHENKO, V.M., red.izd-va; KARASEV, A.I., tekhn. red.

[Modeling the rolling process] Modelirovanie protsessa pro-
katki. Moskva, Metallurgizdat, 1963. 123 p. (MIRA 16:7)
(Rolling (Metalwork))--Mathematical models)

S/148/63/000/001/005/019
E081/E483

AUTHOR: Chizhikov, Yu.M.

TITLE: The theory of similarity in the rolling process

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no.1, 1963, 52-57

TEXT: The stresses at any point in a deformed body are determined by integrating three differential equilibrium equations containing six stress components, and this problem is statically indeterminate. If the plasticity conditions are introduced, it is not possible to solve the differential equations and under these circumstances the use of models gives satisfactory results. In this method the equations describing the process are converted to dimensionless form and a scale factor is introduced. Deformation in the rolling process is described by the equilibrium equations, equations describing the relationships between stress and strain and between the stress and speed components of the metal flow, equations of the continuity of deformation, the plasticity conditions and the boundary conditions on the free and contact surfaces. These equations are all given in the appropriate Card 1/2

The theory of similarity ...

S/148/63/000/001/005/019
E081/E483

dimensionless form and the relations required among the variables for the "model" and "natural" processes to be similar are specified. It is found that the ratio of the "natural" to "model" stresses is equal to the square of the scale factor, and the ratio of "natural" to "model" stored energy is equal to the cube of the scale factor.

ASSOCIATION: TsNIICHM

SUBMITTED: August 10, 1962

Card 2/2

ACCESSION NR: AP4039276

S/0148/64/000/005/0124/0129

AUTHORS: Kidin, I.N.; Shtremel', M.A.; Chizhikov, V.Yu.

TITLE: Work hardening of a Ni-Cr solid solution during tempering

SOURCE: IVUZ. Chernaya metallurgiya, no. 5, 1964, 124-129

TOPIC TAGS: work hardening, solid solution, Ni, Cr, plastic deformation electrical resistivity, Suzuki segregation, recovery

ABSTRACT: The authors observed the effect of the changes in the resistance to small plastic deformations on the transformation in the Ni-Cr solid solution. The 100 x 2.5 x 0.2 - 0.4 mm specimens had the following composition (% weight) : 19.82-20.08% Cr; 0.0180; 0.13-0.25 Al; 0.06-0.010 Ti; 0.08-0.25 Si; 0.37-0.86 Fe; 0.07 Mn and 0.09 Co. Water quenching from 900C and drawing with an 88% reduction were followed by rolling the wire to a 0.4 mm strip and tempering at 400, 450 and 500C for periods ranging from 5 minutes to 800 hrs. The elastic limit, HV and electrical resistivity were measured by standard methods. Electrical resistivity increases until the elastic limit is reached and, thereafter, both values change parallelly. The authors assume that the increase in the

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ACCESSION NR: AP4039276

elastic limit is affected by short-range order changes in the first coordination sphere and that hardness remains almost invariable. At the same time, Suzuki segregation occurs. Long-range order changes affect the entire deformation diagram but not simultaneously and not necessarily in the same direction. The probable combinations of work-hardening and recovery processes are evidently greatly influenced by the character of ordering (homogeneous and inhomogeneous), domain sizes, and the type of anti-phase boundaries. The authors recommend further investigation of the kinetics of work-hardening alloys during ordering and of the calculation of the strength characteristics in the region of very small and very large plastic deformations. The orig. art. has: 5 figures and 2 equations.

ASSOCIATION: Moskovskiy Institut Stali i Splavov (Moscow Steel and Alloys Institute)

SUBMITTED: 28Oct62

SUB CODE: MM

Cord

2/2

NR REF SOV: 011

ENCL: 00

OTHER: 010

CHIZHIKOV, Yu.M. (Moscow)

Control algorithms for the system of automating the rolling process
on slabbing and blooming mills. Izv. AN SSSR. Met. no.4:112-116
Jl-Ag '65. (MIRA 18:8)

L 55155-65

EWT(1)/EWT(m)/EWA(d)/EWF(v)/T/EWP(t)/EWP(k)/EWP(h)/EWP(f)/EWP(l)/EWP(o)

AM5016520

IL/HA/IG

BOOK EXPLOITATION

UR/

621.771:669.15-194

Chizhikov, Yuriy Mikhaylovich

Processes of pressure treatment of alloyed steel and alloys (Protsessy obrabotki davleniyem legirovannykh staley i spлавov) [Moscow], Izd-vo "Metallurgiya", 1955. 0499 p. illus., bibligr. 2917 copies printed.

TOPIC TAGS: pressure working, rolling, forging, alloy steel, alloy steel forging, alloy rolling, alloy forging, structural steel rolling, stainless steel rolling, tool steel rolling electrical steel rolling,

PURPOSE AND COVERAGE: This book is intended for scientists, engineers, and metallurgical and machine building institutes. The book covers the processes of pressure treatment of alloyed steel and alloys, including alloy steel and alloy steel forging, alloy rolling, alloy forging, structural steel rolling, stainless steel rolling, tool steel rolling electrical steel rolling, and features of their use.

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presented. Also described are the processes of rolling and forging structural alloyed steels, ball-bearing steels, alloyed tool steels, tool steels with high chromium content, high-speed steels, stainless, acid-, heat-, and oxidation-resistant steels, electrical, magnetic and nonmagnetic steels and alloys, and steels and alloys with high ohmic resistance and unique physical properties.

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- Ch. III. Heating of alloy steels before rolling and forging them -- 27
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AM5016520

Ch. IV. Cooling of alloy steels after rolling and forging -- 57

Ch. V. Design of rolls used in rolling alloy steels -- 87

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PART II. ROLLING AND FOR-
GING OF ALLOY STEELS AND ALLOYS

Ch. VII. Rolling of structural alloy steels -- 117

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Ch. XI. Rolling and forging of high-speed steel -- 231

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AM5016520

Ch. XII. Rolling of stainless (acid-resistant) steels -- 283

Ch. XIII. Rolling and forging of special acid-resistant alloys -- 345

Ch. XIV. Rolling and forging oxidation-resistant steels and alloys -- 373

Ch. XV. Rolling and forging of heat-resistant steels and alloys -- 395

Ch. XVI. Rolling and forging of steels with high manganese content -- 414

Ch. XVII. Rolling of low magnetic steels -- 421

Ch. XVIII. Rolling and forging of steel used for constant magnets -- 427

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AM5016520

Ch. XX. Rolling and forging of alloys with specific magnetic properties -- 447

Ch. XXI. Rolling and forging of steels and alloys with high ohmic resistance -- 455

Ch. XXII. Rolling and forging of alloys with a given coefficient of thermal expansion -- 480

Ch. XXIII. Rolling and forging of alloys with given elastic properties -- 491

References -- 496

SUB CODE: NM, IE

SUBMITTED: 27 Feb 65

NO REF SOV: 085

OTHER: 009

Card 5/5

Card 1/2

SOV/78-5-1-38/45

A Method Used to Investigate the Differential Thermoelectromotive Force at High Temperatures

Next, an equation is derived for the dependence of α on t_1, T_1 and t_2, T_2 . Experimental results obtained with tungsten carbide within the range 1400-1900°K are compared in figure 2 with data of publications concerning the range 500-1400°K. There are 2 figures and 4 references, 3 of which are Soviet.

SUBMITTED: May 26, 1959

Card 2/2

KUTSEV, V.S., ORMONT, B.F., CHIZHIKOV, Yu.N., MORZHEVEDOVA, R.N.

Method of investigating the differential thermo-emf at high
temperatures. Zhur. neorg. khim. 5 no.4:891-893 Ap '60.
(MIRA 13:7)

1. Fiziko-khimicheskiy institut im. L.Ya. Karpova.
(Electromotive force) (Thermoelectricity)

ACC NR: AP7005674

SOURCE CODE: UR/0413/67/000/002/0144/0144

INVENTOR: Yefimov, K. P.; Romanov, A. S.; Terenin, A. P.; Chizhikov, Yu. V.

ORG: none

TITLE: Device for synchronizing the operation of the exhaust valves of a pressure regulating system for pressurized cabins. Class 47, 190747

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1967, 144

TOPIC TAGS: pressure regulator, aircraft cabin equipment, valve, cabin pressurization, spacecraft carried equipment

ABSTRACT: The proposed synchronizing device consists of a housing whose cavity contains spring-loaded elastic membranes with by-pass valves fastened to them. These valves shut off the main ducts connecting the exhaust valve

UDC: 621.646
629.13.01/06

Card 1/3

ACC NR AP7005674

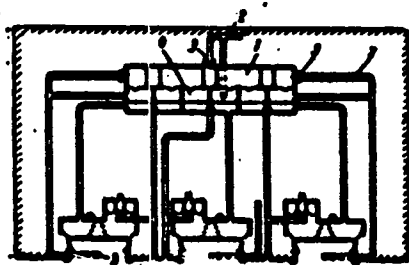
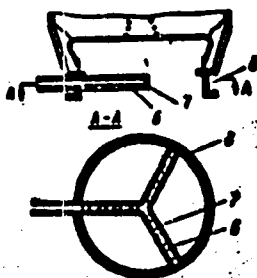


Fig. 1. Synchronization device

- 1 - Cavity above membrane;
- 2 - feed lines; 3 - check valves;
- 4 - chambers under membrane;
- 5 - transducer; 6 - openings;
- 7 - stiffeners; 8 - housing.



Card 2/3

ACC NR: AP7005674

cavities under the membrane to a vent to the atmosphere. To ensure synchronous operation of three or more exhaust valves, the cavity above the membrane in the device is connected by feedlines containing check valves to the corresponding chambers under the membrane and to air flow-rate transducers (see Fig. 1). Orig. art. has: 1 figure. [TN]

SUB CODE: 01/3,4 SUBM DATE: 29 Dec 65/ ATD PRESS: 5117

Card 3/3

ACC NR: AP6035938

SOURCE CODE: UR/0413/66/000/020/0198/0198

AUTHOR: Nikitin, Yu. F., Kobranov, A. N., Tyul'pakov, N. A.; Chizhikov, Yu. V.

ORG: none

TITLE: Rotary valve for pipelines. Class 62, No. 187537

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 20, 1966, 198

TOPIC TAGS: valve, pipeline, pipe flow, ~~liquid~~ flow control

ABSTRACT: An Author Certificate has been issued for a rotary pipeline valve, e.g., such as used in aircraft-compartment heat-control systems. In its housing is mounted a rotating shaft with a disk connected by a coupling (through a profiled cam) with an electric drive and a control valve. To assure a proper seal between the disk and the housing's inner surface, into the housing is pressed a thick-walled cylinder, and connected with it at the ends is a thin-walled cylinder (diaphragm). The sealed space between them is connected with the rotary valve inlet through a control valve, which assures the pressing of the diaphragm to the disk during the feeding of pressure to it. Orig. art. has: 1 figure. [WA-98]

SUB CODE: 13/ SUBM DATE: 09Dec64

Cord 1/1

UDC: 629.13.01/06

L 22727-66	
ACC NR: AP6002925	SOURCE CODE: UR/0286/65/000/024/0086/0086
AUTHORS: <u>Anisimov, O. L.; Borodin, M. D.; Pozdneva, T. V.; Chizhikov, Yu. V.;</u> <u>Tarasova, N. A.; Cherkinskiy, B. Z.</u>	
ORG: none	
TITLE: Method for hermetically sealing interference light filters. Class 42, No. 177115	
SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 24, 1965, 86	
TOPIC TAGS: interference filter, light interference	
ABSTRACT: This Author Certificate presents a method for hermetically <u>sealing</u> interference light filters prepared by depositing an interference film which is then covered with a blank backing with subsequent smearing of the ends with sealing and water-insulating coatings. To protect the interference film of the light filter from moisture, a film, e.g., butaphol, is placed between the interference film and the blank backing. The light filter is then pressurized at increased temperature and pressure until the film is cemented to the backing over all surfaces of the light filter.	
SUB CODE: 20/ SUBM DATE: 03Oct64	
Cord 1/1	UDC: 535.345.67

CHIZHIKOVA, G. A.

KRECH, E. I., CHIZHIKOVA, G. A., BORISYUK, YU. G. dotsent. direktor.

Experiments for the investigation and elimination of causes of spoilage of
zinc drops. Apt. delo 2 no.2:30-33 Mr-Apr '53. (MLRA 6:5)

1. Kafedra neorganicheskoy khimii Khar'kovskogo farmatsevticheskogo instituta
Ministerstva zdravookhraneniya USSR
(CA 47 no.16:8319 '53)

KRECH, E.I.; CHIZHIKOVA, G.A. (Khar'kov)

Keeping zinc drops. Apt. delo 4 no.2:39-40 Mr-Apr '55. (MIRA 8:5)

(ZINC,

preserv. of zinc drops in pharm.)

AUTHORS: Keyser, N. P., Chizhikova, G. I. SOV/20-120-4-39/67

TITLE: The Chemical Adsorption and Catalytic Oxidation of CO on ZnO and Its Solid Solutions, Which Differ With Respect to Their Electric Conductivity (Khimicheskaya adsorbtsiya i kataliticheskoye okisleniye CO na ZnO i yeye tverdykh rastvorakh, otlichayushchikhsya po svoey elektroprovodnosti)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 120, Nr 4, pp. 830 - 833 (USSR)

ABSTRACT: The authors investigated zinc oxide and its solid solutions with lithium oxide and gallium oxide parallel to their catalytic activity and to the chemical adsorption of the reaction components. The production of zinc oxide and of the solid solutions is described in short. The dissolution of lithium oxide decreases the specific surface considerably. The catalytic reaction was investigated in a vacuum device under static conditions at a pressure of not more than 2 torr. CO oxidizes with a measurable velocity only at temperatures above 250°. The kinetics of oxidation in the case of all samples corresponds with the first order. The dissolution of lithium oxide, in the

Card 1/4

The Chemical Adsorption and Catalytic Oxidation of CO on SOV/2o-12o-4-39/67
ZnO and Its Solid Solutions, Which Differ With Respect to Their Electric
Conductivity

case of concentrations of up to 0,5 atom per cent Li exercises only little influence on the constant of the velocity; in the case of a further increasing percentage of lithium oxide, the constant of velocity decreases considerably and can then be measured only at higher temperatures. The activation energy and the constant before the exponent in the expression for the velocity constant increase according to the law $E=E_0+\gamma \lg k_0$.

The dissolution of gallium somewhat decreases the activation energy of the oxidation of CO. The adsorption of oxygen decreases the electric conductivity of all samples and this speaks for a decrease of the concentration of free electrons. The dissolution of lithium oxide accelerates the adsorption of oxygen considerably; this is a consequence of the decrease of the activation energy of adsorption. At room temperature CO is very quickly adsorbed by ZnO. This velocity of adsorption decreases with increasing temperature and at 200° it becomes insignificantly low. The adsorption of CO at room temperature does not change electric conductivity, but at 340° conductivity

Card 2/4

The Chemical Adsorption and Catalytic Oxidation of CO SOV/20-120-4-39/67
on ZnO and Its Solid Solutions, Which Differ With Respect to Their Electric
Conductivity

increases. The dissolution of 0,5 to 1,25 atom per cent completely suppresses the adsorption of CO at room temperature and at higher temperatures. The strong influence of the dissolution of lithium oxide upon the catalytic properties is connected with the alteration of the active surface. The adsorption of oxygen considerably influences the state that marks the velocity of oxydation. There are 3 figures, 3 tables, and 6 references, 2 of which are Soviet.

PRESENTED: February 19, 1958, by A.N.Frumkin, Member, Academy of Sciences, USSR

SUBMITTED: February 18, 1958

Card 3/4

The Chemical Adsorption and Catalytic Oxidation of CO SOV/20-120-4-39/67
on ZnO and Its Solid Solutions, Which Differ With Respect to Their Electric
Conductivity

1. Carbon monoxide--Oxidation 2. Carbon monoxide--Catalysis 3. Carbon monoxide
--Adsorption 4. Zinc oxide--Adsorptive properties 5. Metal oxides--Catalytic
properties 6. Metal oxide compounds--Conductivity

Card 4/4

PAGE 1 BOOK EXPLANATION 807/5921

Abdumirzaev, A. S. Institute of Chemistry, Kazan

Problems of Kinetics and Catalysis. [Vol. 10: Physical and Physical-Chemical Problems of Catalysis] Moscow, Izdatvo AN USSR, 1960. 401 p. Irregularly inserted. 2,600 copies printed.

Zin, S. Z. Bogdanovskiy, Corresponding Member of the Academy of Sciences USSR, and O. V. Krylov, Candidate of Chemistry; Eds. of Publishing House: A. A. Kharkovskiy, Tech. Ed.: O. A. Astaf'yeva.

FOREWORD: This collection of articles is addressed to physicists and chemists and to the community of scientists in general interested in recent research in the physics and physical chemistry of catalysis.

CONTENTS: The articles in this collection were read at the conference on the Physics and Physical Chemistry of Catalysis organized by the Otdel Khimicheskikh Nauk AN USSR (Section of Chemical Sciences, Academy of Sciences USSR) and by the Academic Council on the problem of "the scientific basis for the selection of catalysts." The Conference was held at the Institut Fizicheskoy Khimii AN USSR (Institute of Physical Chemistry of the AN USSR) in Moscow, March 20-21, 1960. Of the great volume of material presented at the conference, only papers not published elsewhere were included in this collection.

Kontsevich, J. [Section of the Academy of Sciences, Institute of Physical Chemistry, Prague]. On the Theory of Chemisorption and of Surface States	34
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Popovskiy, V. V., and G. K. Kozlovskiy [Moskovskiy Khimicheskotekhnicheskii Institut Imeni D. I. Mendeleeva (Moscow Chemical Technology Institute D. I. Mendeleev)]. Catalytic Activity of the Metal Oxides of the 4th Period in Relation to the Oxidation Reaction of Hydrogen	67
Krylov, O. V. [Institute of Physical Chemistry AN USSR]. Nature of the Heterogeneity of the Active Surface of Semiconductor Catalysts	73
Chelidze, G. A., and P. P. Kreyer [Institute of Physical Chemistry AN USSR]. Regularities in the Mechanism of Chemical Adsorption and Catalysis Over Solid Solutions of Zinc Oxide	77
Kudakov, L. F., and P. P. Kreyer [Institute of Physical Chemistry AN USSR]. Investigation of Chemical Adsorption of Gases on Nickel Oxide and Its Solid Solutions	82
Korotkovskiy, G. A. Mechanism of Electron Exchange in the Photocatalysis of Water Over Semiconductors	87
Iskhakov, M. B. [Institute of Physical Chemistry AN USSR]. Study of the Surface Charge of Oxide Semiconductor Catalysts During Adsorption	88
Isosimovskiy, P. O., O. Ye. Brada, T. A. Semakova, and S. G. Lyubimovskaya [Central Research Institute of the Academy of Sciences (State Institute of the Nitrogen Industry)]. Investigation of Zinc, Chromium, and Copper Oxide Base Catalysts for the Conversion of Carbon Monoxide	92
Polubnikov, A. M., V. A. Akimov, and A. A. Slinkin [Institute of Organic Chemistry of the AN USSR]. Röntgenographic and Magnetochromic Investigation of Blended Catalysts	95
Gorodkov, E. A. [Physicochemical Institute of the AN USSR]. Type of Bond and Properties of Semiconductors of the Crystalline Chemical Group Diamond - Zinc Blende - Wurtzite	98

L 8492-66 EWT(1)/EWT(m)/EWP(j)/T/EWP(t)/EWP(b) IJP(c) JD/RM

ACC NR: AP5026475

SOURCE CODE: UR/0195/65/006/005/0854/0859

AUTHOR: Krylova, A.V.; Margolis, L. Ya.; Chizhikova, G.I.

ORG: Institute of Chemical Physics, AN SSSR (Institut khimicheskoy fiziki AN SSSR)

TITLE: Electric properties of the volume and surface of zinc oxide

SOURCE: Kinetika i kataliz, v. 6, no. 5, 1965, 854-859

TOPIC TAGS: zinc oxide, work function, electric conductivity, adsorption

ABSTRACT: The electronic work function, electrical conductivity, and adsorption of oxygen were determined on pure and modified zinc oxide (containing 1 at. % Li or 1 at. % In) calcined for 6 hr in air at 500, 900, and 1300C. The conditions of thermal pretreatment of the ZnO semiconductor were found to have a considerable effect: depending upon these conditions, a symbatic or antibatic relationship of the volume and surface electronic properties was found. The mechanism of the action of impurities on these properties is apparently determined by the previous history of the sample. The observed dependence of the adsorptive capacity of zinc oxide relative to oxygen on the work function indicates the important role of the surface charge in the processes of adsorption and catalysis.
Orig. art. has: 3 figures and 4 tables.

Cord 1/2

UDC 546.47-31:621.315.592

L. 8492-66

ACC NR: AP5026475

SUB CODE: 11 / SUB DATE: 27Jun64 / ORIG REF: 006 / OTH REF: 009

BVK
Card 2/2

CHIZHIKOVA, G.I.; KEYYER, N.P.

Mechanisms of the chemical adsorption and catalysis on solid
solutions of zinc oxide. Probl. kin. i kat. 10:77-81 '60.
(MIRA 14:5)

1. Institut fizicheskoy khimii AN SSSR.
(Zinc oxide) (Lithium oxide) (Carbon monoxide)

S/081/61/000/022/005/076
B102/B108

AUTHORS: Krasovs'kiy, I. V., Chizhikova, G. P., Salo, D. P., Solon'ko, V. M.

TITLE: Study of the departure from additivity of some physical properties of binary solutions of non-electrolytes and analysis of these solutions with respect to refractive index and density

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 22, 1961, 43, abstract 22B298 (Farmatsevtichny zh., no. 6, 1960, 10-18)

TEXT: The departure from additivity of various physical properties of binary solutions of non-electrolytes is characterized by a here defined "additivity coefficient" γ . Its dependence on the concentration of the solutions is studied. γ was found to remain almost constant throughout the concentration range studied only with respect to refractive index and density. [Abstracter's note: Complete translation.]

Card 1/1

BERKOVSKIY, V.S., inzh.; LOBAREV, M.I., inzh.; KHUDIK, V.T., inzh.;
CHIZHIKOVA, I.Yu., inzh.


Wear and the surface finish of cast-iron rolling mill rolls.
Stal' 21 no. 4:340-343 Ap '61. (MIRA 14:4)

1. Zavod "Dneprospetsstal'"
(Rolls (Iron mills)--Testing)

15,100S/122/60/000/005/009/017
A161/A130AUTHORS: Mikhalev, I. I.; Voi, Ts. M.; - Engineers; Chizhkova, L. A.TITLE: Heat-resistant BC-10T (VS-10T) glue for joining friction linings
on brake shoes

PERIODICAL: Vestnik mashinostroyeniya, no. 5, 1960, 40-42

TEXT: Information on a new glue, VS-10T (developed by M. V. Sobolevskiy, Z. G. Ivanova, et al.) is given. It is the best of all that had been tried as replacement for nonferrous rivets used for attaching friction linings to automobile brake shoes. The glue consists of a single component and can be stored for 6 months. The recommended gluing procedure is the following: spread in a single layer on both metal surfaces in quantity corresponding to $200-250 \text{ g/m}^2$, held open in air for not less than 15 min at 20°C or 5 min at $60-65^\circ$, then joined and held under pressure for 40 min at 180° . Linings so joined were tested on the brake shoes of the "Moskvich" car. The surface of the linings was ground, and that of the brake shoes zinc plated. The average shear strength of glued linings was 3,030 kg, comparing to only 1,660 kg of riveted. Glue-attached linings were also tested at NAMI on an inertial stand at 250°C and 90 km/h



Card 1/2

Heat-resistant BC-10T (VS-10T) glue ...

S/122/60/000/005/009/017
A161/A130

1c

velocity and on a high number of cars. The service life of glued linings was 50-60% longer than of riveted, and no traces on the brake drums were left by the linings. There are 3 figures and 2 tables.

Card 2/2

KOVALEVSKIY, I.I., kand. tekhn. nauk; YERMAKOV, Yu.M., ; MERINOV, N.A.;
FROLOVA, V.A.; CHIZHIKOVA, L.I.; NINEMYAGI, D.K., red. izd-va;
SHERSTNEVA, N.V., tekhn. red.

[Album of heating furnaces and stoves] Al'bom otopitel'nykh i by-
tovykh pechei. Moskva, Gosstroizdat. Pt.2, [Stoves for heating
and cooking] Pechi otopitel'no-varochnye. 1962. 88 p.
(MIRA 16:1)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut po
stroitel'stvu, Rostov-on-Don. 2. Rukovoditel' laboratorii oto-
pleniya i ventilyatsii Nauchno-issledovatel'skogo instituta po
stroitel'stvu, Rostov-on-Don (for Kovalevskiy). 3. Nauchno-
issledovatel'skiy institut sanitarnoy tekhniki Akademii stroitel'-
stva i arkhitektury SSSR (for Yermakov, Merinov, Frolova,
Chizhikova). (Stoves) (Furnaces, Heating)

KRASOVSKIY, I.V. [Krasovs'kyi, I.V.]; CHIZHIKOVA, G.P. [Chyzhykova, H.P.];
SALO, D.P.; SOLON'KO, V.M.

Study of the deviation of some physical properties of binary nonelectrolyte solutions from the additive pattern and an analysis of these solutions based on the refraction and density index. Farmatsev. zhur. 15 no.6:10-18 '60; (MIRA 14:11)

1. Kafedra fizicheskoy khimii Khar'kovskogo farmatsevticheskogo instituta, zaveduyushchiy kafedroy dotsent I.V.Krasovskiy [Krasovs'kyi, I.V.].

(SOLUTIONS (PHARMACY)) (ELECTROLYTE SOLUTIONS)